

# American Alpine Institute<sup>Ltd.</sup>

## GLACIER SKI MOUNTAINEERING IN THE CASCADES EQUIPMENT LIST

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It is essential that you do a meticulous job in selecting and preparing your equipment for this course. Mountain weather is a major objective hazard even in the summer; in the winter and spring it can at times present extreme challenges to survival. This course is fairly demanding on the body — not because we want to make it hard, but because winter and spring climbing and travel is simply more difficult than summer climbing. Please also note that regardless of the ski equipment you choose to use for the course, it is essential that you check it out carefully prior to the course. If you have any questions about choosing your gear, feel free to call for advice.

### CLOTHING

**Ski Boots** - Whether on telemark gear or randonee, plastic boots are strongly recommended. Skiers who use 3-pin nordic bindings should bring heavy duty nordic ski boots, preferably double boots. If you own leather boots and want to use them they need to be well waterproofed, above ankle height and have a very rigid sole. Use of Supergaiters with leather ski boots is a must. Recommended manufacturers of Randonnee boots include Scarpa, Lowa, Dynafit and Garmont.

**Gaiters** - Knee high. If you buy gaiters ahead of time make sure they are large enough to fit over plastic climbing boots (not really necessary with Randonnee boots if your Gortex fits properly). Gaiters can be rented or purchased at AAI before your course.

**Socks** - Wool or synthetic, (no cotton). Bring two complete changes. It is recommended one wear a thin liner sock, and one or two pair of thick socks depending on boot fit.

**Long Underwear Bottoms and Tops** - This will be your base layer and should be light-weight polyester, polypropylene or similar synthetic.

**2nd Layer (Bottom):** Schoeller or nylon fabrics preferred. This will be your action layer for your legs and the layer that you will spend the most time in. This layer should be light, comfortable, durable, quick drying, and provide some protection from wind and water. Black Diamond Alpine Pants, Arcteryx Gamma pants, and Marmot Champ pants are good examples of this layer.

**3rd Layer (Top):** This will be your action layer and the layer that you spend the most time in. Schoeller or nylon fabrics preferred. Seek out soft jackets that are light, comfortable, durable, quick drying, and provide some protection from wind and water. Lightly insulated is ok but not required. Arcteryx, Moonstone, Marmot, Marmut, and many other companies make soft shell jackets that work well for this layer.

**Shell Layer (Upper):** This will be your outermost layer and it needs to be waterproof, breathable, and durable. Two or three-ply Gore-tex or other waterproof breathable materials are required. Your parka needs to have a hood and should be sized to fit over your clothes. Lightweight and compressible layers are ideal but don't sacrifice too much weight for durability. Models like the Arcteryx Beta and Gamma jackets, Marmot Alpinist and Precip, and Patagonia Stretch Armstrong are top of the line.

**Shell Layer (Lower):** Full side zips recommended for easy on and off over boots and crampons, Make sure they fit over all of your layers when fully dressed. Pants or bibs are acceptable and each have their advantages and disadvantages. Materials should be Gore-tex or other similar water-proof and breathable fabrics. Examples include Marmot Cirrus and Minima pants, Arcteryx Alpha SV bibs and Beta AR Pants, Patagonia Stretch Element and Microburst pants work well.

**Liner Gloves** - Polypropylene / polyester.

**Gloves:** Gloves for mountaineering should be waterproof, dexterous, durable, and appropriately insulated for the temperatures expected while in the mountains. Leather palms are preferred and increase the durability of the glove. Most of your climbing time will be spent in either your poly-pro gloves or these, heavier gloves. There are many modular systems for gloves out there that allows liners to be inter-changed. Models like the Black Diamond Ice and Verglas glove, Patagonia Stretch-Element and Work gloves, and models by Outdoor Research are recommended.

**Balaclava**

**Warm Hat** - Synthetic is less itchy than wool and dries faster.

**Sun Hat** - A baseball cap serves well.

## EQUIPMENT

**Skis and bindings** - Randonee or Telemark skis and bindings. Very narrow skis often will not give enough flotation when carrying heavy loads. Skis with metal edges are required.

**Skins** - climbing skins are required. The types that use adhesive such as Ascension climbing skins, produced by Black Diamond Equipment.

**Poles** -A basic ski pole will work however adjustable pole are recommended. Many adjustable poles on the market also double as avalanche probe poles if needed.

**Large internal frame pack** - 4000 cubic inches minimum capacity; 5000 is usually preferred. External frame packs are much more difficult to ski and climb in.

**Summit pack** - 1500-2000 cubic inches. You can choose to only use your large pack. Internal frame packs with load compression straps make acceptable summit packs.

## CAMPING GEAR

**Tent** - Lightweight 4-season tent capable of withstanding winds to about 40 mph and continuous, multi-day rain. We normally pair up in tents so if you don't have one, you may be able to share a rental.

**Sleeping bag** - synthetic fill or down rated to 5°F.

**Two Sleeping pads** - two full length closed cell pads or one closed cell and one Thera-rest (with repair tape). One pad may be acceptable in the spring; one full-length and one 3/4 length is an acceptable combination in the Cascades; a two full-length pad combination is required for the Rockies.

**Bivouac sack** - recommended, basically a Gore-Tex sleeping bag shell for added warmth and dryness.

**Stove** - Pump type, white gas stoves, such as the MSR models are preferred. Bring a cleaning needle. Compressed butane or propane stoves are acceptable but work very poorly unless well insulated from the snow and can be very difficult to operate adequately under adverse conditions. Course participants often pair up on stoves. Due to airline restrictions\*\* you may not bring used fuel bottles on the airline. If you already own a MSR stove bring it and your pump and AAI will loan you a fuel bottle. If you do not own a stove you can rent everything.

\*\*United Airlines has indicated that backpacking stoves with *detachable* fuel containers may be taken on board, but only the stove itself (the fuel container-new or used- **MUST** be left at home). The stove must be air dried of any fuel and be sent via checked baggage, not carry on. Further information on this regulation may be found by a United Airlines employee under *Hazardous Materials: Camping equipment; footnote.*

**Fuel** - For early season prior to mid July course participants need a liter of fuel\* per person the extra fuel is required to melt snow for drinking and cooking water. Later season when water is accessible 3/4 liter is sufficient for 6 days for one person. White gas can be purchased from AAI.

\* (As a reminder, fuel cannot be taken on airplanes.)

**Fuel Bottle\*\*** - Leak-proof bottles such as Sigg or MSR are best. Can be rented or loaned if you already own a stove.

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**Pots** - One 1 1/2 or 2 quart pot is enough for one person. Two people sharing a stove should bring two pots.

**Utensils** - Large thermal mug or cup (pint size best) and spoon minimum. Most people also bring a bowl.

**Lighters** - Bring two.

**Water Purification** - Bring tablets such as Potable Aqua. These are lightest and most efficient. If you want to use a filter pump realize that streams will not be accessible until mid season and make little sense prior to this time.

**Hydration:** 3 liters of water capacity are the minimum. Hydration packs or bladders like the Camelback or Platypus with appropriate accessories are recommended. Two water bottles, usually one-quart Nalgene type, are required. Other plastic bottles, similar in nature can work as well.

Special care will have to be taken at higher altitudes and colder temperatures, if using the bladder and tube system, to avoid freezing your drink. There are several types of insulators are available and having one of these is a good idea.

**Thermos** - optional.

**Glacier glasses** - with side shields.

**Ski goggles**

**Sunscreen** - With a protection factor of at least 20 and even more for people with fair skin. You know yourself best just remember that the glare from the snow increases your chance of getting burned.

**Lip protection** - spf 15 minimum.

**Headlamp** - with extra bulb and batteries.

**Compass** - High quality with adjustable declination, sighting mirror, liquid filled.

**Pocket knife** - or similar multitool, Leatherman.

**Personal medical kit** - for minor cuts, scrapes, blisters, etc.

**Hand/Foot Warmers:** Recommended for cold weather courses and for people that are susceptible to cold hands and toes. These should be small, disposable type products like the ones made by Grabber Mycoal.

**Foot Powder:** Foot powder is very useful especially on longer trips or for people with sweaty feet. Foot powder can help dry your feet, and promote warmth on cold weather trips. Be mindful of the storage container and make sure it will stand up to the abuse it will be subjected too.

**Toiletries** - white TP, toothbrush, etc.

**Large plastic garbage bags** - bring three.

**Zip-lock plastic bags** - bring six of the one-quart size.

**Courses with a climbing component will also need the following:**

**Ice Axe** - 60 cm to 70 cm length with standard toothed pick and wrist loop. If your axe doesn't have a wrist loop, pre-sewn ones are available commercially or you can bring about 6 feet of 9/16 inch tubular webbing and we'll tie it on the course.

**Crampons** - Flexible. Be sure they fit your boots. Crampons with step-in bindings should be used only with plastic boots or leather boots with soles designed specifically to accept heel and toe bails.

**Climbing Harness** - Should fit over bulky clothing. Adjustable leg loops help in this regard. Consider purchasing a lighter weight harness but one with gear loops.

**Carabiners** - Bring four, two of which should be large, locking, pear shaped (or Münter) biners.

**Climbing Helmet** - Kayak, bicycle or construction helmets are not acceptable.

**Prusiks** - Prusiks are specially tied loops of 6mm cord used for crevasse rescue. If you don't have a set of prusiks from a previous AAI course then bring three lengths of 6 mm perlon, 13 feet, 6 feet, and 5 feet. (Pre-cut lengths are available for sale at AAI.)